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Robin E. Leigh

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**PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Thomas Ferianz

Group Art Unit: Not Assigned

**Serial No.: Not Assigned**

Examiner: Not Assigned

Filed: Herewith

Docket No.: 1406/21

For: BROADBAND DRIVER

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**PRELIMINARY AMENDMENT**

Commissioner for Patents  
BOX PATENT APPLICATION  
Washington, D.C. 20231

Dear Sir:

Kindly amend the subject application as follows:

**IN THE SPECIFICATION:**

Please insert a paragraph heading on page 1 of the English translation of the subject application, before line 5, as follows:

**--Technical Field --**.

Please insert a paragraph heading on page 1 of the English translation of the subject application, before line 8, as follows:

**--Related Art --**.

Please insert a paragraph heading on page 3 of the English translation of the subject application, line 15, as follows:

**--Summary of the Invention --**.

Please insert a paragraph heading on page 5 of the English translation of the subject application, line 15, as follows:

**--Brief Description of the Drawings--**

Please insert a paragraph heading on page 5 of the English translation of the subject application, before line 38, as follows:

**--Detailed Description of the Invention--**.

IN THE CLAIMS:

Please insert the paragraph heading on page 14 of the English translation of the subject application, before claim 1, as follows:

-- What is claimed is: --.

Please amend claims 1-15 as follows:

1. (Amended) A broadband driver for signals that are transmitted in different frequency ranges, comprising:

- (a) a first broadband driver circuit for driving first signals having signal frequencies that lie in a first frequency range;
- (a) a second broadband driver circuit for driving second signals having signal frequencies that lie in a second frequency range;
- (b) where at least one of the two broadband driver circuits has a frequency-dependent positive-feedback circuit for impedance synthesis of a frequency-dependent output impedance of the broadband driver circuit, and where the output impedance has a different value in the first frequency range than in the second frequency range.

2. (Amended) The broadband driver as claimed in claim 1, wherein the first broadband driver circuit is designed to drive audio frequency voice signals, audio frequency ringing signals and DC signals.

3. (Amended) The broadband driver as claimed in claim 1, wherein the second broadband driver circuit is designed to drive radio frequency data signals.

4. (Amended) The broadband driver as claimed in claim 1, wherein the first broadband driver circuit has a signal preamplifier circuit connected to its input.

5. (Amended) The broadband driver as claimed in claim 1, wherein the positive-feedback circuit feeds a signal output of the first broadband driver circuit to a signal input of the first broadband driver circuit.

6. (Amended) The broadband driver as claimed in claim 5, wherein the positive-feedback circuit feeds the signal output of the first broadband driver circuit to a signal input of the signal preamplifier circuit.

7. (Amended) The broadband driver as claimed in claim 1, wherein the positive-feedback circuit has a complex impedance.

8. (Amended) The broadband driver as claimed in claim 1, wherein the positive-feedback circuit contains a capacitor.

9. (Amended) The broadband driver as claimed in claim 7, wherein the complex impedance of the positive-feedback circuit decreases as the signal frequency increases.

10. (Amended) The broadband driver as claimed in claim 1, wherein the broadband driver circuits have a fully differential design.

11. (Amended) The broadband driver as claimed in claim 4, wherein the signal preamplifier circuit has a fully differential design.

12. (Amended) The broadband driver as claimed in claim 1, wherein the signal outputs of the two broadband driver circuits are connected in parallel and are connected to a transmission channel via a signal output of the broadband driver.

13. (Amended) The broadband driver as claimed in claim 12, wherein the transmission channel is a two-wire telephone line.

14. (Amended) The broadband driver as claimed in claim 1, wherein the signal output of the second broadband driver circuit is connected to a transformer circuit.

15. (Amended) The broadband driver as claimed in claim 3, wherein the radio frequency data signal is an xDSL signal.

#### REMARKS

The amendments to the specification as set forth above are intended to clarify and set apart the various sections of the subject application.

The amendments to the claims as set forth above are intended to remove all multiple dependent claims from the subject application and to more particularly point out and distinctly claim the subject matter of the invention.

Attached hereto is a marked-up version of the specification and claims 1-15, which illustrates all of the changes made to the specification and claims pursuant to 37 CFR §1.121. The attached page is captioned "**Version With Markings To Show Changes Made**". Deleted language is bracketed and added language is underlined.

The Commissioner is hereby authorized to charge any deficiencies or credit any overpayments in connection with the filing of this correspondence to Deposit Account No. **50-0426**.

Respectfully submitted,

JENKINS & WILSON, P.A.

Date: 10-3-01

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25297

PATENT TRADEMARK OFFICE

1406/21

REJ/lsg

**Serial No.: Not yet assigned**

**Version With Markings To Show Changes Made**

**IN THE SPECIFICATION:**

The paragraph heading has been inserted on page 1 of the English translation of the subject application, before line 5, as follows:

**Technical Field**

The paragraph heading has been inserted on page 1 of the English translation of the subject application, before line 8, as follows:

**Related Art**

The paragraph heading has been inserted on page 3 of the English translation of the subject application, line 15, as follows:

**Summary of the Invention**

The paragraph heading has been inserted on page 5 of the English translation of the subject application, line 15, as follows:

**Brief Description of the Drawings**

The paragraph heading has been inserted on page 5 of the English translation of the subject application, before line 38, as follows:

**Detailed Description of the Invention**

**IN THE CLAIMS:**

The paragraph heading has been inserted on page 15 of the English translation of the subject application, before claim 1, as follows:

**What is claimed is:**

1. (Amended) A broadband driver for signals that are transmitted in different frequency ranges, comprising:

- (a) a first broadband driver circuit [(19)] for driving first signals having signal frequencies that lie in a first frequency range;
- (c) a second broadband driver circuit [(24)] for driving second signals having signal frequencies that lie in a second frequency range;
- (d) where at least one of the two broadband driver circuits [(19)] has a frequency-dependent positive-feedback circuit [(44)] for impedance synthesis of a frequency-dependent output impedance [(Z<sub>out</sub>)] of the broadband driver circuit [(19)], and where the output impedance [(Z<sub>out</sub>)] has a different value in the first frequency range than in the second frequency range.

2. (Amended) The broadband driver as claimed in claim 1, wherein the first broadband driver circuit [(19)] is designed to drive audio frequency voice signals, audio frequency ringing signals and DC signals.

3. (Amended) The broadband driver as claimed in claim 1 [or 2], wherein the second broadband driver circuit [(24)] is designed to drive radio frequency data signals.

4. (Amended) The broadband driver as claimed in [one of the preceding claims] claim 1, wherein the first broadband driver circuit [(19)] has a signal preamplifier circuit [(60)] connected to its input.

5. (Amended) The broadband driver as claimed in [one of the preceding claims] claim 1, wherein the positive-feedback circuit [(44)] feeds a signal output [(20)] of the first broadband driver circuit [(19)] to a signal input of the first broadband driver circuit [(19)].

6. (Amended) The broadband driver as claimed in claim [4] 5, wherein the positive-feedback circuit [(44)] feeds the signal output [(20)] of the first broadband driver circuit [(19)] to a signal input of the signal preamplifier circuit [(60)].

7. (Amended) The broadband driver as claimed in [one of the preceding claims] claim 1, wherein the positive-feedback circuit [(44)] has a complex impedance.

8. (Amended) The broadband driver as claimed in [one of the preceding claims] claim 1, wherein the positive-feedback circuit [(44)] contains a capacitor.

9. (Amended) The broadband driver as claimed in [one of the preceding claims] claim 7, wherein the complex impedance of the positive-feedback circuit [(44)] decreases as the signal frequency increases.

10. (Amended) The broadband driver as claimed in [one of the preceding claims] claim 1, wherein the broadband driver circuits [(19, 24)] have a fully differential design.

11. (Amended) The broadband driver as claimed in [one of the preceding claims 4 to 10] claim 4, wherein the signal preamplifier circuit [(60)] has a fully differential design.

12. (Amended) The broadband driver as claimed in [one of the preceding claims] claim 1, wherein the signal outputs [(20, 27)] of the two broadband driver circuits [(19, 24)] are connected in parallel and are connected to a transmission channel [(13)] via a signal output [(12)] of the broadband driver [(1)].

13. (Amended) The broadband driver as claimed in claim 12, wherein the transmission channel [(13)] is a two-wire telephone line.

14. (Amended) The broadband driver as claimed in [one of the preceding claims] claim 1, wherein the signal output of the second broadband driver circuit [(24)] is connected to a transformer circuit [(81)].

15. (Amended) The broadband driver as claimed in [one of the preceding claims 3 to 14] claim 3, wherein the radio frequency data signal is an xDSL signal.